

CLAIMS:

1. A method for modulating fertility in an animal, said method comprising administering to said animal an effective amount of IL-11 or a functional derivative thereof or a homologue thereof or an effective amount of an agonist or antagonist of interaction between IL-11 and IL-11R $\alpha$ .
2. A method for modulating fertility in an animal, said method comprising modulating the levels of expression of the gene encoding IL-11 and/or its receptor.
3. A method according to claim 1 or 2 wherein the animal is a human, primate, livestock animal, companion animal, laboratory test animal or a captive wild animal.
4. A method according to claim 3 wherein the animal is a female animal.
5. A method according to claim 1 or 2 wherein the fertility is down-modulated by administering an effective amount of an antagonist of IL-11 and IL-11R $\alpha$  interaction sufficient to induce or facilitate defective decidualization.
6. A method according to claim 1 wherein the fertility is up-modulated by administering IL-11 or a functional derivative or homologue thereof or an agonist of IL-11 and IL-11R $\alpha$  interaction or genetic material to up-regulate expression of IL-11 or IL-11R $\alpha$ .
7. A method according to claim 6 wherein IL-11 or an agonist is co-administered with one or more cytokines.
8. A method according to claim 7 wherein the co-administering cytokine is selected from LIF, CNTF, IL-6 and OSM or functional derivatives or homologues thereof.

9. A method of enhancing fertility and/or maintenance of a pregnancy in a female animal, said method comprising administering to said female animal an effective amount of IL-11 or a functional derivative or homologue thereof or an agonist thereof for a time and under conditions sufficient for a pregnancy to proceed past the early post-implantation stage.

10. A method of enhancing fertility and/or maintenance of a pregnancy in a female animal, said method comprising modulating the levels of expression of the gene encoding IL-11 and/or its receptor for a time and under conditions sufficient for a pregnancy to proceed past the early post-implantation stage.

11. A method according to claim 9 or 10 wherein the animal is a human, primate, livestock animal, companion animal, laboratory test animal or a captive wild animal.

12. A method according to claim 11 wherein the fertility is down-modulated by administering an effective amount of an antagonist of IL-11 and IL-11R $\alpha$  interaction sufficient to induce or facilitate defective decidualization.

13. A method according to claim 11 wherein the fertility is up-modulated by administering IL-11 or a functional derivative or homologue thereof or an agonist of IL-11 and IL-11R $\alpha$  interaction or genetic material to up-regulate expression of IL-11 or IL-11R $\alpha$ .

14. A method according to claim 13 wherein IL-11 or an agonist is co-administered with one or more cytokines.

15. A method of decreasing fertility or promoting termination of a pregnancy in a female animal, said method comprising administering to said female animal an effective amount of an antagonist of IL-11 or IL-11-receptor interaction.

16. A method of decreasing fertility or promoting termination of a pregnancy in

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a female animal, said method comprising modulating the levels of expression of the gene encoding IL-11 and/or its receptor.

17. A method according to claim 15 or 16 wherein the animal is a human, primate, livestock animal, companion animal, laboratory test animal or a captive wild animal.

18. A method according to claim 17 wherein the fertility is down-modulated by administering an effective amount of an antagonist of IL-11 and IL-11R $\alpha$  interaction sufficient to induce or facilitate defective decidualization.

19. A method according to claim 17 wherein the fertility is up-modulated by administering IL-11 or a functional derivative or homologue thereof or an agonist of IL-11 and IL-11R $\alpha$  interaction or genetic material to up-regulate expression of IL-11 or IL-11R $\alpha$ .

20. A method according to claim 19 wherein IL-11 or an agonist is co-administered with one or more cytokines.

21. A composition for modulating fertility in an animal said composition comprising IL-11 or a functional derivative or homologue thereof or an agonist or antagonist of interaction between IL-11 and IL-11R $\alpha$  and one or more pharmaceutically acceptable carriers and/or diluents.

22. A composition according to claim 21 further comprising a cytokine selected from LIF, CNTF, IL-6 and OSM.

23. An animal model comprising a mutation in at least one allele for IL-11 and/or IL-R $\alpha$ .

24. An animal model according to claim 23 wherein the animal is a murine species.